

IN THE CLAIMS:

Please cancel claims 42-47 without prejudice or disclaimer to the subject matter therein, and add new claims 48-53 as follows.

1-47 (Canceled)

48. (New) A signal transmission and receiving apparatus for transmitting and receiving a PSK or QAM modulated signal having information of a first data stream and a second data stream, the apparatus comprising a transmission apparatus and a receiving apparatus,

said transmission apparatus comprising:

- a Reed-Solomon encoder operable to Reed-Solomon encode the second data stream to produce a Reed-Solomon encoded data stream;

- a modulator operable to modulate the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulate the Reed-Solomon encoded data stream to an n-level PSK or QAM modulated signal;

wherein the first data stream has data for demodulation including the number of signal points of the constellation of the second data stream; and

- a transmitter operable to transmit the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal;

said receiving apparatus comprising:

- a demodulator operable to demodulate the m-level PSK or QAM modulated signal to the first data stream and demodulate the n-level PSK or QAM modulated signal to a demodulated data stream,

wherein the demodulated data stream is reproduced according to the data for demodulation included in the first data stream; and

- a Reed-Solomon decoder operable to Reed-Solomon decode the demodulated data stream to the second data stream.

49. (New) A signal transmission apparatus for transmitting a PSK or QAM modulated signal having information of a first data stream and a second data stream, the apparatus comprising:

- a Reed-Solomon encoder operable to Reed-Solomon encode the second data stream to produce a Reed-Solomon encoded data stream;

- a modulator operable to modulate the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulate the Reed-Solomon encoded data stream to an n-level PSK or QAM modulated signal;

wherein the first data stream has data for demodulation including the number of signal points of the constellation of the second data stream; and

- a transmitter operable to transmit the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal.

50. (New) A signal receiving apparatus comprising:

- a receiver operable to receive a transmitted PSK or QAM modulated signal,

wherein said transmitted PSK or QAM modulated signal includes an m-level PSK or QAM modulated signal and an n-level PSK or QAM modulated signal;

- a demodulator operable to demodulate the m-level PSK or QAM modulated signal to a first data stream having data for demodulation including the number of signal points of the constellation of a Reed-Solomon encoded data stream and demodulate the n-level PSK or QAM modulated signal to a demodulated data stream, wherein the first data stream is not Reed-Solomon encoded and the demodulated data stream is Reed-Solomon encoded,

wherein the demodulated data stream is reproduced according to the data for demodulation in the first data stream; and

- a Reed-Solomon decoder operable to Reed-Solomon decode the demodulated data stream to a second data stream.

51. (New) A signal transmission and receiving method for transmitting and receiving a PSK or QAM modulated signal having information of a first data stream and a second data stream, the method comprising a transmission method and a receiving method,

said transmission method comprising:

- Reed-Solomon encoding the second data stream to produce a Reed-Solomon encoded data stream;

- modulating the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulating the Reed-Solomon encoded data stream to an n-level PSK OR QAM modulated signal;

wherein the first data stream has data for demodulation including the number of signal points of the constellation of the second data stream; and

- transmitting the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal;

said receiving method comprising:

- demodulating the m-level PSK or QAM modulated signal to the first data stream and demodulating the n-level PSK or QAM modulated signal to a demodulated data stream;

wherein the demodulated data stream is reproduced according to the data for demodulation included in the first data stream; and

- Reed-Solomon decoding the demodulated data stream to the second data stream.

52. (New) A signal transmission method for transmitting a PSK or QAM modulated signal having information of a first data stream and a second data stream, the method comprising:

- Reed-Solomon encoding the second data stream to produce a Reed-Solomon encoded data stream;

- modulating the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulating the Reed-Solomon encoded data stream to an n-level PSK or QAM modulated signal;

wherein the first data stream has data for demodulation including the number of signal points of the constellation of the second data stream; and

- transmitting the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal.

53. (New) A signal receiving method comprising:

- receiving a transmitted PSK or QAM modulated signal,

wherein said transmitted PSK or QAM modulated signal including an m-level PSK or QAM modulated signal and an n-level PSK or QAM modulated signal;

- demodulating the m-level PSK or QAM modulated signal to a first data stream having data for demodulation including the number of signal points of the constellation of a Reed Solomon encoded data stream and demodulating the n-level PSK or QAM modulated signal to a demodulated data stream, wherein the first data stream is not Reed-Solomon encoded and the demodulated data stream is Reed-Solomon encoded,

wherein the demodulated data stream is reproduced according to the data for demodulation included in the first data stream; and

- Reed-Solomon decoding the demodulated data stream to a second data stream.